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### Psychosocial outcomes in diabetes

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A sculpture of two stylized, elongated human figures in a dynamic, intertwined pose. The figures are rendered in a light, translucent material, possibly glass or polished stone, with a smooth, glossy finish. They are positioned on a simple, rectangular, light-colored base. The word "Summary" is overlaid in the center of the image, between the two figures. The background is a solid, light gray.

## Summary



The present thesis focuses on psychosocial outcomes in individuals dealing with diabetes, by taking both an intrapersonal and interpersonal perspective. The burden of a demanding and unending self-management regimen and the prospect of possible complications may negatively affect psychological well-being and adjustment of those individuals confronted with this disease. However, some individuals will be more negatively affected by the disease than others. This may depend on their personality and the way they appraise the disease (intrapersonal factors), but also on their social environment, such as their intimate partner and other patients with diabetes (interpersonal factors).

In **chapter 1** we explain the intrapersonal and interpersonal factors that we investigated more in detail. One of the *intrapersonal* factors that were considered to be relevant for psychosocial outcomes is called regulatory focus. Regulatory focus is an individual characteristic and consists of two self-regulatory systems; promotion and prevention focus. Individuals with a strong promotion focus are oriented toward obtaining positive outcomes in life, whereas individuals with a strong prevention focus are oriented toward avoiding negative outcomes. These different orientations can be expected to be differently related to psychosocial adaptation. Other intrapersonal factors that we were interested in were patients' self-efficacy, that is, whether patients believe they are capable of performing certain behaviors, and patients' glycemic control which refers to the typical levels of blood sugar. Finally, the role of gender was explored throughout the chapters since previous studies have indicated that certain interpersonal factors may have a stronger impact on women's than on men's psychosocial outcomes.

The *interpersonal* factors that were considered to be important for psychosocial adaptation are support behavior and social comparison. In this thesis, we distinguished between three ways of providing support: active engagement, protective buffering, and overprotection. Active engagement refers to a support behavior in which the partner uses constructive problem-solving methods, like involving the significant other in discussions, inquiring how the other feels and asking about the help and information needed. In general, active engagement can be viewed as positive support behavior. Protective buffering means hiding one's concerns, denying one's worries, concealing discouraging information, preventing the significant other from thinking about the illness, and yielding in order to avoid disagreement. Overprotection means that the partner underestimates the patient's capabilities, resulting in unnecessary help, excessive praise for accomplishments, or attempts to restrict activities. Although perhaps well-intended, both protective buffering and overprotection have been found to be associated with less positive psychological outcomes. Furthermore, active engagement and protective buffering are support behaviors that can be enacted by both patients and partners, whereas overprotection is support behavior that is more typically enacted by partners. Another interpersonal factor that is explained in chapter 1 is social comparison, which can

consist of upward and downward comparisons. Upward comparison refers to comparing yourself with other individuals who are doing better than you are (e.g. in terms of diabetes management and disease outcomes), so-called upward targets. Downward comparison refers to comparing yourself with other individuals who are doing worse than you are, so-called downward targets. In chapter 1 we explain how social comparison information may boost patients' motivation to manage their diabetes.

At the end of chapter 1 we give an outline of the thesis. It is explained that throughout the chapters we do not only focus on how the intrapersonal and interpersonal factors are separately associated with individuals' psychosocial outcomes, but that we also investigate the combined impact of these factors.

In this thesis we made use of data from two different groups of respondents. Three of the four chapters report on data collected in a study of psychosocial adaptation in individuals confronted with diabetes. In this study, 690 eligible, consecutive patients with type 1 and 2 diabetes requiring insulin from the northern part of the Netherlands were approached by their physician during a check-up visit to complete a short screening questionnaire. This short questionnaire was filled out and returned by 507 patients. Of these patients, 419 (82.6%) indicated to have an intimate partner. For the purposes of this study, we were interested in the larger questionnaires (T1 – T4) that were sent to both patients and their partners after patients had filled out the short questionnaire. Three to four months separated the administration of the first three questionnaires, and five to six months separated the third and fourth questionnaire. There were 223 couples who completed the T1 questionnaire. Chapter 2 reports on data collected in another study. In this study (a large national survey), 5500 persons of 55 years and older from different areas in the Netherlands were asked to participate. In total, a number of 2497 respondents (45.4%) completed the questionnaire. For the purposes of our study, we only used the data of 477 respondents with an intimate partner and who reported having diabetes, asthma, or heart disease when presented a list with several health problems.

**Chapter 2** looked at the combined impact of patients' regulatory focus and partners' support behavior on levels of distress in patients. This chapter refers to chronic diseases (including diabetes) in which the patient can exert control over the course of the disease by engaging in several self-management behaviors. We argue that in persons with these chronic diseases an individual characteristic such as regulatory focus (i.e., promotion and prevention focus) may have an important influence on levels of distress. We further argue how support behaviors of their partner may create a promotion-focused or prevention-focused environment and how these support behaviors (i.e., active engagement, protective buffering, and overprotection) as such may alter the influence of patients' regulatory focus. The results showed that partners' support behaviors moderated the negative association between promotion focus and distress in that this association was

only found when patients reported that their partner engaged in relatively low levels of active engagement or relatively high levels of protective buffering and overprotection. Patients reported relatively low levels of distress when they received high levels of active engagement or low levels of protective buffering and overprotection, regardless of whether they had a weak or a strong promotion focus. Active engagement appears to buffer against high distress in patients with a weak promotion focus, while protective buffering and overprotection appear to aggravate distress in these patients. The positive association between prevention focus and distress was not consistently found to be moderated by partner support.

**Chapter 3** specifically focuses on overprotection as a support behavior. We aimed to identify both *how* and *when* overprotection is associated with diabetes-related distress in patients. We reasoned that overprotective behavior by the partner may confer the message to the patient that the partner has little confidence in the patient's ability to deal with the disease effectively. This lack of confidence of the partner may lead patients to doubt their own ability to manage the disease, thus lowering their levels of self-efficacy. In turn, lower levels of diabetes-specific self-efficacy may increase diabetes-related distress. It was indeed found that diabetes-specific self-efficacy mediated the association between overprotection by the partner and diabetes-related distress. In addition, it was hypothesized that this mediated association would be stronger in certain subgroups of patients. The first subgroup that was identified included patients with relatively poor glycemic control. These results supported our reasoning that patients who feel less self-efficacious (because they are overprotected) will experience more diabetes-related distress when confronted with a poor glycemic control because these patients are less confident about their ability to improve their glycemic control. The second subgroup of patients for whom the mediated association was strongest included female patients. The explanation is that lower levels of self-efficacy are more strongly associated with distress in female patients than in male patients, because diabetes may have a higher salience to women compared to men. Previous research has for example shown that female patients reported a higher impact of diabetes on daily life than male patients. If one perceives the diabetes as highly salient, one may become even more distressed when one feels little self-efficacious in dealing with this disease. The findings of chapter 3 highlight the importance of studying both how and when partner support is associated with distress in patients.

In **chapter 4** we examine the associations between support behavior, i.e. active engagement and protective buffering, and relationship satisfaction. In the majority of previous studies, associations like these were only investigated in patients. However, diabetes is not only an individual affair, but a couple's affair as well. This means that behaviors like active engagement and protective buffering can be enacted by both

patients and partners. Therefore, in our study, we focused on partners' psychosocial outcomes as well. Using a dyadic data analytic approach, that takes into account the interdependence between patients and partners we found relationship satisfaction to be positively associated with active engagement, and negatively with protective buffering. Moreover, we found a moderating effect, in that the negative association between protective buffering and relationship satisfaction was only present when levels of active engagement were relatively low. The results were found in both patients and partners and support the idea that less adequate support behavior such as protective buffering may only be perceived as negatively intended when at the same time, one receives low levels of active engagement. In this situation, one may believe that the other person pretends everything is fine because he or she does not care at all. Received buffering is then viewed as negative behavior and is likely to have negative effects on relationship satisfaction. In contrast, received protective buffering may be perceived as less negatively intended when at the same time, one receives high levels of active engagement. In this situation, the other person's buffering can be perceived as an attempt not to add more distress. Therefore, received buffering may not be associated with less relationship satisfaction, since it is not viewed as negative behavior under these circumstances. The findings in this chapter illustrate the need to consider adequate and less adequate support behaviors simultaneously, and to study the effects on both patients and partners.

In the previous chapters we also investigated the role of gender, by examining whether gender moderated the associations we had found. Chapter 3 explicitly focused on the role of gender and found support for a moderating effect of gender. However, the interactive effects of regulatory focus and partner support in chapter 2 were not further qualified by gender, nor were the interactive effects of active engagement and protective buffering in chapter 4. The main effects in these chapters were also not consistently moderated by gender. The results show that it is not clear when partner support may have a stronger impact on women than on men, and that more research is necessary.

In chapters 2, 3, and 4 we have demonstrated that the intimate partner may influence psychosocial outcomes in patients. The research question in **chapter 5** is whether other persons in the social environment may have an impact on the patient. More specifically, the aim was to determine the impact of social comparisons with fellow patients on patients' motivation to manage their diabetes. Social comparison can consist of upward and downward comparisons. Traditionally, it has been proposed that upward comparisons may motivate and inspire individuals. However, in chapter 5 we demonstrate that not only upward, but also downward comparison information may motivate patients, depending on their regulatory focus and self-efficacy. Patients were presented with a fictitious interview with either an upward comparison target (a fellow patient showing adequate self-care behaviors and experiencing optimal disease outcomes) or a downward comparison

target (a fellow patient showing less adequate self-care behaviors and experiencing negative disease outcomes). It was found that comparison targets that matched patients' regulatory focus increased patients' motivation, whereas comparison targets that did not match patients' regulatory focus showed no impact on patients' motivation. That is, it was shown that high promotion-focused patients reported more motivation than low promotion-focused patients when confronted with the upward target. High prevention-focused patients reported more motivation than low prevention-focused patients when confronted with the downward target. This latter finding was qualified by patients' self-efficacy, as it applied only to patients with relatively high levels of self-efficacy. This interactive effect of self-efficacy is in line with the reasoning that only patients with a strong prevention focus who believe they can avoid the negative outcomes represented by the downward comparison target will be motivated by this target. Patients who have a strong prevention focus but who do not believe they can avoid the negative outcomes experienced by the downward comparison target, will not be motivated by this target. The results of chapter 5 indicate that when using comparison targets to encourage self-care activities in persons with diabetes, these targets need to be tailored to patients' individual characteristics.

Finally, in **chapter 6** we discuss the main findings of the thesis. Four overall conclusions are drawn. The first conclusion is that patients with vulnerable individual characteristics or with poor disease outcomes (i.e., a weak promotion focus or a poor glycemic control) may be at risk of experiencing high levels of (diabetes-related) distress, especially when their partner provides inadequate support. The second conclusion is that the negative effects of protective buffering on relationship satisfaction may be compensated for by high levels of active engagement, in both patients and partners. The third conclusion is that we did not find consistent gender differences with regard to associations between support behavior and psychosocial outcomes. Lastly, the fourth conclusion is that social comparison information is most likely to boost patients' motivation to manage their disease when this information is congruent with patients' regulatory focus. We explain the theoretical and clinical implications of each of these conclusions and suggestions for future research are provided. Altogether, it is concluded that it is important to consider the interplay between patients' individual characteristics and patients' social environment when explaining psychosocial outcomes.



